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A new land rent theory for sustainable agriculture☆

Bazyli Czyżewski*, Anna Matuszczak

Poznań University of Economics and Business, Poland Al. Niepodległości 10, 61-875 Poznań, Poland

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ABSTRACT

The agri-food sector is a crucial element of "integrated order", because its functioning depends on natural resources, especially on the land factor. There exists the crucial question of whether the land factor is still capable of generating economic rents which can be the determinants of comparative advantages. On the one hand, D. Ricardo's land rents are vanishing, H. George's rents are provoking financial crisis, and monetarists' assumptions are proving inadequate; while on the other, the land factor is gaining new environmental applications, and there is still a hope that land rents have their origins in a real value. These premises entitle one to formulate the hypothesis that the productivity of capital in agriculture in Poland is increasing because of intrinsic values of agricultural land. That implies a need to rethink the neoclassical theories of land rent. The main objective of this article is to elaborate a framework of a new land rent theory and to test it. This is done by evaluating capital productivity in agriculture in Poland and comparing it with the land rent value derived from market prices of agricultural property. The falsification of the theory over a long period fails. Meanwhile, the auxiliary assumptions are verified, implying that the new concept of land rent may be a true one.

1. Introduction

Analysis of the development of concepts of land rent throughout the history of economic thought shows that their assumptions are not well-adapted to the present realities of the agricultural sector. Ricardian theory assumed only the existence of differential rents and denied the existence of absolute rent: "The reason then, why raw produce rises in comparative value, is because more labor is employed in the production of the last portion obtained, and not because a rent is paid to the landlord. The value of corn is regulated by the quantity of labor bestowed on its production on that quality of land, or with that portion of capital, which pays no rent. Corn is no high because a rent is paid, but a rent is paid because corn is high; and it has been justly observed, that no reduction would take place in the price of corn, although landlords should forego the whole of their rent. Such a measure would only enable some farmers to live like gentlemen, but would not diminish the quantity of labor necessary to raise raw produce on the least productive land in cultivation" (Ricardo, 1821).

Quoting the reasoning of K. Marx, the rent of marginal lands is not the consequence of growth in the prices of crops, but on the contrary he said, that this circumstance that the worst soil should bring the rent to let it be cultivated would be the reason of the crops' price growth to the level when this condition can be fulfilled (Marx, 1959). In K. Marx's opinion the absolute rent is the surplus value of a product over its production price, which appears because of the higher relation of capital to labor in agriculture (in conditions of labor exploitation).

H. George defined the land factor much more broadly than D. Ricardo or K. Marx, namely as a resource which is neither capital nor labor. In this approach the land was separated from the ground, and as a result it cannot be withdrawn from production as can labor or capital (Backhaus, 1997). Nevertheless, H. George specified that rents are only the payment for using the land excluding any inputs to improve it. The land without those inputs lacks any intrinsic utility.

Mainstream economists developed A. Marshall's interpretation of land rents, focusing on market factors. According to this concept, only the supply elasticity of land determines the existence of rent (Robinson, 1948; Brooke, 2010).

Generally speaking: Ricardian economics too strongly believes in the price mechanism; the absolute rent theory assumes that all values originate from labor; according to the "residual rent theory"

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* Corresponding authors.
E-mail addresses: b.czyzewski@ue.poznan.pl (B. Czyżewski), anna.matuszczak@ue.poznan.pl (A. Matuszczak).

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of H. George land functions come down to the location factor; and the neoclassical theory shows that rent is a result of market failure. None of the aforementioned economists attributed to land any of the intrinsic utilities which obviously occur in so-called "sustainable agriculture".

The aim of this paper is to deduce and to test empirically a framework of a new concept of land rent, in harmony with the sustainable development paradigm. This would enable the formulation of important recommendations for EU agricultural policy, which is currently in a period of transition.

In accordance with K. Popper's asymmetry, an attempt will be made to falsify the assumed theory (hypothesis), because an empirical verification of a predicted observation is a deductively invalid way of proving a theory (Popper, 1959). Thus, if the falsification fails, it will mean that the theory may be true. However, non-falsification of a theory requires that auxiliary assumptions are demonstrably true (Gezelter, 2009). Therefore, the authors also focus on verifying the assumptions on which the concept is built.

2. Sustainable agriculture in the debate on the evolution of the CAP

The ongoing debate on the CAP towards 2020 is closely related to the problem of vitality of rural areas, as well as to the question of public goods provision. Public goods are goods desired by society which the market is not able to provide. In the case of agriculture and rural areas, external effects occur. Some of these are positive, and can be classified as public goods because the benefits of farmers' activities are transferred to third parties without any compensation. The concept of public goods and the role of the CAP in the delivery of public goods have been investigated thoroughly in a number of studies, including Cooper et al. (2009), ENRD (2010), RISE (2009), and Baum and Śleszyński (2009). The idea of public goods is an important element of the discussion on new models for the development of European agriculture (De Janvry, 2010; Czyżewski and Czyżewski, 2013). The widest debate concerns a model of sustainable and multifunctional agriculture. Its aim is the development of agriculture so as to be economically viable, socially responsible and protective of nature (Matuszczak, 2014; Sadowski, 2009; Majewski, 2008; Zegar, 2008). It will also provide non-food goods and take care of the social, cultural and landscape aspects of the countryside, besides its production functions (Adamowicz, 2005). Agriculture and rural areas are able to provide public goods at the level expected by society, but at the price of state subsidies (Villanueva et al., 2014; Felipe-Lucia and Comín, 2014; Maciejczak, 2009). Usually, the provision of public goods requires extensive livestock farms, mixed breeding and cultivation systems, traditional methods of farming and organic farms, which use less fertilizer and pesticides. However, more productive agricultural activities may also create public goods through modern technology, which can improve soil and water management and reduce greenhouse gas emissions (Baldock et al., 2015). Such behavior must be stimulated by agricultural policy, and it is. In the Communication of the European Commission in November 2010 – "The CAP towards 2020: Meeting the food, natural resources and territorial challenges of the future" – three basic objectives of the CAP are set out: profitable food production, sustainable management of natural resources and climate action, and balanced territorial development (European Commission 2010). The European Parliament has also recognized the role of the CAP in ensuring a sufficient supply of public goods, both in the Lyon report on the future of the Common Agricultural Policy after 2013 (European Commission 2010), as well as in the Dessa report (European Parliament, 2011). It should be emphasized that the economic, social and demographic trends in rural areas differ within the EU as well as in particular member countries. For this reason there should be flexibility in the spending of CAP funds, and a regional approach to shaping rural development programs should be adopted (Mantino, 2011). In spite of CAP subsidies we can observe regions and rural communities which are shrinking and becoming marginalised, with a distorted age structure, few employment opportunities and disrupted social networks.

3. Sustainable agriculture and new sources of land rent

The sustainable agriculture paradigm has been reflected in the so called "land-based approach" which is a background for the CAP in 2014–2020 (Overview of CAP Reform, 2013) This approach faces the new challenge: land is expected to provide more environmental amenities ensuring safety food and profitable production in the same time (Malkina-Pykh and Pykh, 2003; Gliessman and Rosemeyer 2010). The solution is to capitalize these amenities (in subsidies or food prices and in land prices). However, the amenities will occur only if capital-intensity of farming lowers. Thus, we can say that they are not capital-origin but land-origin (Altieri, 1989). We arise question whether a land has "intrinsic" utility and productivity? Since the beginning of human civilization, land has been generating certain utilities which satisfy people's needs. They are generated without the participation of other production factors, thus constituting an undeniable gift of nature. In his encyclical *Caritas in Veritate*, Pope Benedict XVI defines them as "wonderful fruit, which humans may take responsible advantage of to satisfy their just – tangible and intangible – needs, respecting inner balance." In tribal (natural) economies, when agricultural land as presently understood did not exist, forest fruit, hunted animals, and access to water or firewood were examples of such utilities. The role of land in their creation prevailed over the labor and capital input necessary to obtain them. It might be said that the majority of land utilities were generated intrinsically. When land cultivation began and animals were domesticated, the part attributable to nature slightly decreased in favour of man's driving role. Nevertheless, plants, animals, construction materials and broadly defined living space were still obtained largely without any contributions.

In the feudal system, so-called servitudes may be considered a form of legitimisation of intrinsic land utilities, treating them as rights to use natural utilities of the land owned by a lord (in the form of brushwood, fruit, clay or fish). As the money-goods economy developed, the part of the land factor created without the participation of capital or labor became transformed into what is called intrinsic productivity. This is visible in the 18th-century concept of a pure product, as presented by the physiocrats. This states that a financial surplus over capital and labor inputs may remain only in agriculture—as a consequence of nature's driving force. The pure product in F. Quesnay's input-output table is thus the first attempt at valuing the intrinsic productivity of land.

In a peasant economy, therefore, the part of utilities attributed exclusively to forces of nature was relatively large and was reflected in a certain part of a farm's financial productivity (as it generated part of its product without any input). Its significance started to decline in the conditions of agricultural industrialisation and activation of the right of marginal utility. In industrial agriculture, the intrinsic share of land in creating utilities decreased in favour of capital and contract work. Intrinsic financial productivity of land also decreased considerably. In time, however, the productive functions of agricultural land, subordinate to microeconomic optimisation and the requirement to satisfy existential needs, became mutually competitive. This resulted in the need to seek a new concept of economic development, providing for a sustainable agriculture paradigm.